EXHIBIT Q

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TECHNOLOGY

Two Teams Place Genes Into Corn

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Two biotechnology teams announced they have successfully inserted foreign genes into corn plants, a major goal of agricultural biotechnology.

DeKalb Genetics Corp., a commercial seed producer, and a joint U.S. Department of Agriculture-Monsanto Co. team both announced they had successfully produced fertile, genetically altered corn plants capable of passing their new genes on to succeeding generations.

The feat opens the way to making corn, the nation's biggest crop, resistant to disease, drought and herbicides, as well as to increasing its nutritional value.

A similar bioengineering claim was made in January by BioTechnica International Inc. Unlike DeKalb and the USDA-Monsanto team, however, BioTechnica has declined to say what genes it inserted into corn plants and what technique it used.

Implications for Other Crops

Getting new genes into corn also has implications for other key grain crops such as wheat and rice. Until now, inserting new genes into plants has been successful only in a class of plants known as "dicots," those that produce two leaf-like growths called cotyledons when their seeds first sprout. Tomatoes, tobacco and rapeseed are among the dicots that have been successfully engineered genetically.

Corn, as well as wheat, rice and other cereals, is among the "monocots" that produce only a single cotyledon on sprouting and that have defied attempts at genetic engineering. While scientists have been able to get new genes into monocot plants, the plants previously have ended up sterile and unable to pass the new genes on in their seed.

'Gene Gun'

DeKalb said its scientists had used a "gene gun" to fire microscopic pellets into test-tube cultured cells of the corn plant. The pellets were coated with a gene that produces a resistance to the herbicide bialaphos. Cells that incorporated the new gene were identified by the fact that they survived treatment with bialaphos. The genetically altered cells were then grown into full-sized corn plants that, in turn, produced seed resistant to the herbicide.

The bialaphos-resistance gene was used only because it served as a "marker," enabling the scientists to track the gene. The gene is of little economic importance in the U.S., where bialaphos isn't used, though it's used in Europe, according to Thomas Rice, a DeKalb scientist.

The DeKalb research was carried out at laboratories in Groton, Conn., leased from Pfizer Inc. Earlier this year, DeKalb bought out Pfizer's 30% equity interest in what had been a joint venture, DeKalb-Pfizer Genetics.

Inserting Two 'Markers'

The USDA-Monsanto announcement said USDA scientists at laboratories in Albany, Calif., had used a similar "gene gun" to fire new genes into corn-cell cultures developed at Monsanto's laboratories in St. Louis. The scientists inserted two "marker" genes into the corn cells: one gene that allowed the cells to grow in the presence of an inhibitor; and a second gene, taken from fireflies, that causes the cells incorporating the gene to glow under a special low-light detector.

The cells that incorporated the two genes were grown to mature plants that were then pollinated. The resulting seeds were planted in a greenhouse where a crop of seedlings is now growing. The light-detector has found that about half the seedlings have the firefly gene.

The feats are a major technological advance, but scientists cautioned it may be several years before farmers will have genetically altered seed to plant. Not only must scientists get the right genes into corn, but they have to make sure the genetic alteration doesn't affect the yield and other valuable attributes of the plant. It will take several seasons of field-testing to produce useful genetically engineered hybrid corn seed, Mr. Rice cautioned.

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; teams place genes into corn. (DeKalb Genetics Corp., United States Department of Agriculture and Monsanto Co. team have successfully inserted foreign genes into corn plants)
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